

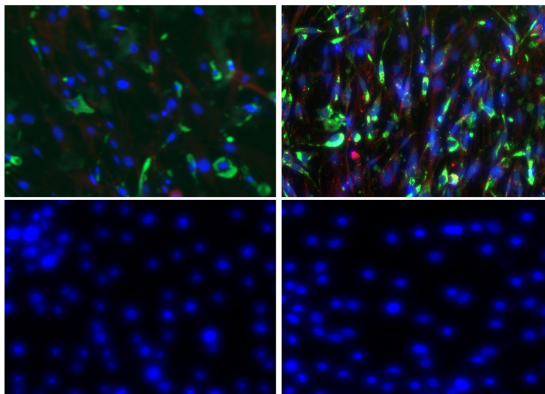
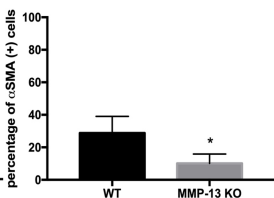
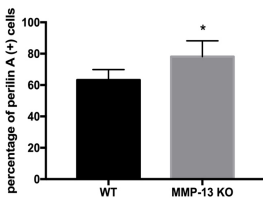
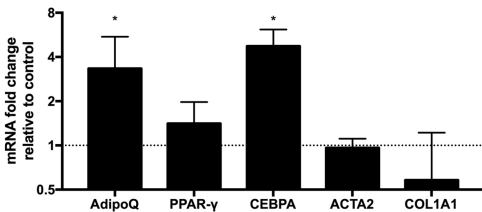
## **Supplementary Material**

# **The Role of Matrix Metalloproteinase-13 (MMP13) in TGF $\beta$ /BMP Pathway Regulation of Fibro-Adipogenic Progenitor (FAP) Differentiation**

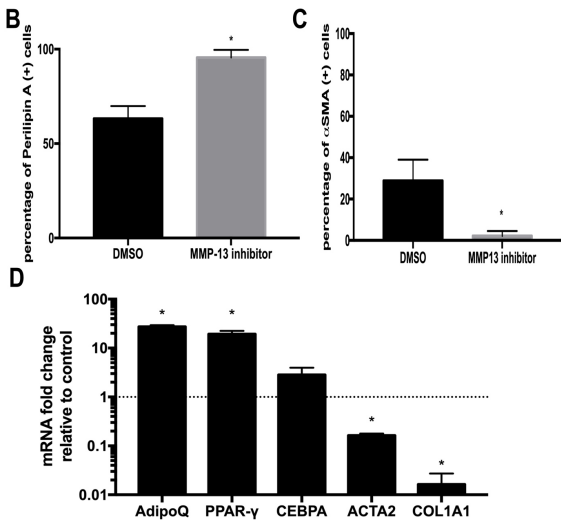
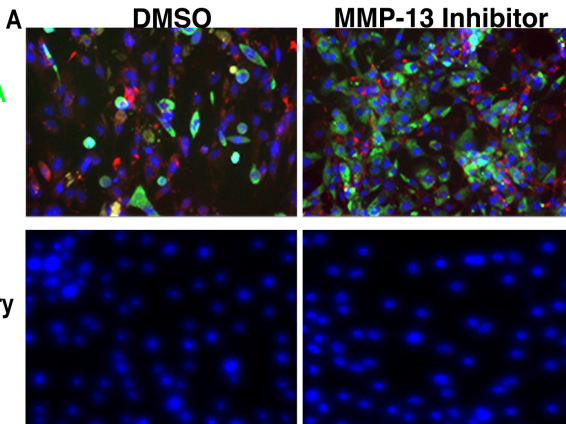
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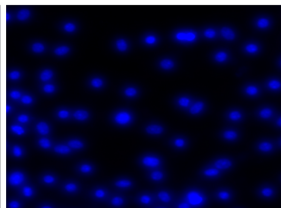
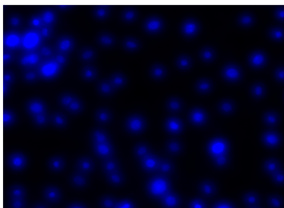
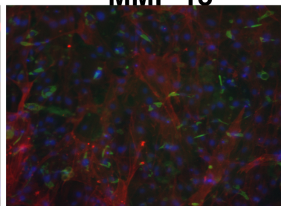
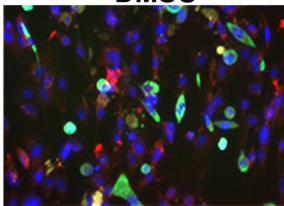
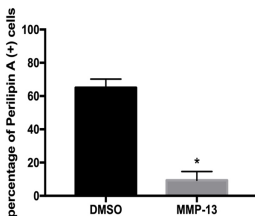
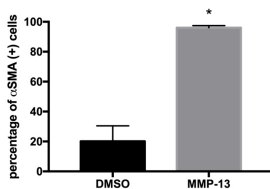
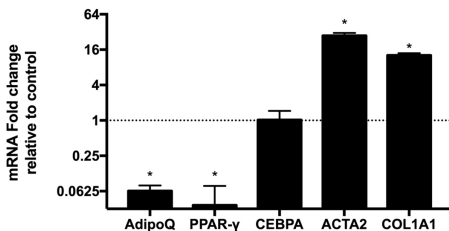
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**A****WT****MMP-13 KO****Perilipin A**  
**αSMA****No primary**  
**Antibody**  
**Control****B****C****D**

Supplemental Figure 1. FAPs from MMP13 KO mice have increased spontaneous adipogenesis and decreased spontaneous fibrogenesis compared to FAPs from WT mice cultured in the adipogenic medium. A) A typical image of immunostaining for perilipin A and  $\alpha$ SMA in FAPs from WT and MMP13 KO mice after 2 weeks of culturing in adipogenic medium. B) FAPs from MMP13 KO mice had significantly higher percentage of perilipin A positive cells compared to FAPs from WT mice. C) FAPs from MMP13 KO mice had a significantly lower percentage of  $\alpha$ SMA positive cells compared to FAPs from WT mice. D) Real time PCR showed that FAPs from MMP13 KO mice had a significantly higher expression of Adiponectin and C/EBP compared to FAPs from wildtype mice (\*  $p < 0.05$ ).



Supplemental Figure 2. Wildtype FAP treated with the MMP13 inhibitor had significantly increased adipogenesis in adipogenic medium. A) A typical image of immunostaining in FAPs treated with 10  $\mu$ M MMP13 inhibitor and 0.1% DMSO in the adipogenic medium for 2 weeks. B) WT FAPs treated with the MMP13 inhibitor had a significantly higher percentage of perilipin A (+) cells compared to those treated with DMSO. C) FAPs treated with the MMP13 inhibitor had a significantly reduced the number of  $\alpha$ SMA positive cells compared to DMSO. D) Real time PCR showed that FAPs treated with the MMP13 inhibitor had a significantly increased expression of Adiponectin, PPAR $\gamma$ , and decreased expression of  $\alpha$ SMA and Collagen I (\*  $p<0.05$ ).

**A****DMSO****MMP-13****Perilipin A**  
 **$\alpha$ SMA****No primary**  
**Antibody**  
**Control****B****C****D**

Supplemental Figure 3. MMP13 treatment inhibits FAP adipogenesis and promotes FAP fibrogenesis in adipogenic medium. A) A typical image of immunostaining for FAPs treated with 100ng/ml MMP13 and 0.1% DMSO in adipogenic medium for 2 weeks. B) FAPs treated with MMP13 have a significantly reduced the number of perilipin (+) cells compared to DMSO. C) FAPs treated with MMP13 have a significantly increased the number of  $\alpha$ SMA (+) cells compared to the DMSO treatment group. D) Real time PCR results of FAPs treated with MMP13 showed a significantly decreased expression of adipogenesis-related genes and increased expression of fibrogenesis-related genes (\*  $p < 0.05$ ).